



Summary of Fishery Surveys

Bass Lake near Weyerhaeuser, Rusk County, 2010 – 2011

WDNR's Fisheries Management Team from Park Falls completed fyke netting and electrofishing surveys in 2010 and 2011 to assess the status of important fish populations in Bass Lake. Fyke netting in late September 2010 yielded useful information on black crappie. Fyke nets deployed again shortly after the 2011 spring thaw targeted walleye, northern pike, and yellow perch. A late-spring electrofishing survey documented the abundance and size structure of largemouth bass and bluegill populations. Quality, preferred, and memorable sizes referenced in this summary are based on standard proportions of world record lengths developed for each species by the American Fisheries Society. "Keeper size" is based on known angler behavior.

Survey Effort

On September 20th, 2010 with water temperatures 60 – 63°F, we set three fyke nets for one night (3 net nights) to intercept fall movements of black crappies. On May 2nd, 2011 we set three fyke nets at locations chosen to intercept early-spring spawning species and fished them overnight for two nights (6 net-nights) when water temperature was 44 – 49°F. Comparing measured water temperature with the optimal spawning temperature range of the targeted species, our spring fyke netting was well timed to represent northern pike, walleye and yellow perch population status. With water temperatures at 66°F our June 1st electrofishing survey should have coincided with the spawning activities of largemouth bass and bluegills. We sampled the entire 1.95 miles of shoreline in 1.22 hour, including 0.50 mile sub-sampled for all species in 0.45 hour.

Habitat Characteristics

Bass Lake is an 88-acre seepage lake located about 3½ miles west of Weyerhaeuser, WI and the largest of four Rusk County lakes with the same name. The average depth is 8 feet, and maximum depth is 27 feet. The water is clear (Secchi depth = 11 feet) and the substrate is 45% sand, 15% gravel, and 40% muck, supporting a moderate density of submergent and emergent vegetation. An intermittent stream enters on the south end and discharges from the northwest corner to a cranberry bog. The shoreland vegetation is 75% upland hardwood and conifer and 25% tamarack bog. A public boat landing and beach are located on the east shore on Village of Weyerhaeuser land just off Old 14 Road.

Summary of Results

We captured eight fish species in our most recent fyke netting and electrofishing surveys. The main predator fish was largemouth bass and the most common panfish was bluegill. The only other gamefish captured were three walleyes, four northern pike (17-34 inches), and one brown trout (22 inches). Yellow bullheads, whose young provide important food for largemouth bass and walleyes, were captured at a rate of 15 per net-night, suggesting a moderate population abundance. With 74% of yellow

bullheads in spring nets 10 inches or longer, anglers who enjoying catching large bullheads have opportunity in Bass Lake. We measured one yellow bullhead at just over 14 inches long, which is considered trophy size for the species.

Bass Lake has been stocked almost annually since 1982 to create “put-and-take” angling opportunity for large trout and in several attempts to increase the density and variety of predators that might help control panfish abundance. Since 1987 WDNR has planted brown trout (usually 20 – 26”) annually and rainbow trout (usually 15 – 22”) in alternate years after they outlived their usefulness as brood stock for hatchery production. Walleyes from state-operated hatcheries and cooperative rearing ponds were stocked as 14-inch adults in 1988 and as small (1½ - 2½”) or large (6 - 8”) fingerlings in 1990 – 1998. With permit approval the Bass Lake Preservation Association purchased and stocked 810 large walleye fingerlings in 2006 – 2011, and in fall 2014, under expanded fish propagation afforded by the Wisconsin Walleye Initiative, WDNR resumed stocking walleyes at a rate of 10 large fingerlings per acre. Our records show that in 1982 – 1991 bowfin, channel catfish, northern pike, hybrid muskellunge, and largemouth bass have also been stocked to increase predatory pressure and reduce panfish abundance. In the early 1990s WDNR and volunteers used fyke nets to capture and remove panfish from Bass Lake in an effort to decrease the abundance of the bluegill population, which had very slow-growing individuals and very poor size structure.

Walleye



Early Spring Fyke Nets

Captured	0.2 per net-night	≥ 10"
Quality Size	≥ 15"	0%
Preferred Size	≥ 20"	0%
Memorable Size	≥ 25"	0%

After stocking nearly 10,000 walleyes in Bass Lake over the last 25 years, we captured only one in our early spring nets (a 14.7-inch male) and two others (11.5 and 14.7”) in our fall netting and late spring electrofishing surveys. All were likely survivors from stocking in 2006, 2007, and 2008. Low catch rates indicate a very low adult population abundance and low survival of stocked fingerlings. Bass Lake may be too clear and too shallow to offer the low light intensity necessary for walleye to thrive. Because effective predation by young walleyes could still play an important role in curbing panfish abundance in Bass Lake, we will continue stocking as funds allow and evaluate our strategy after our next surveys scheduled in fall 2019 and spring 2020.

Black Crappie

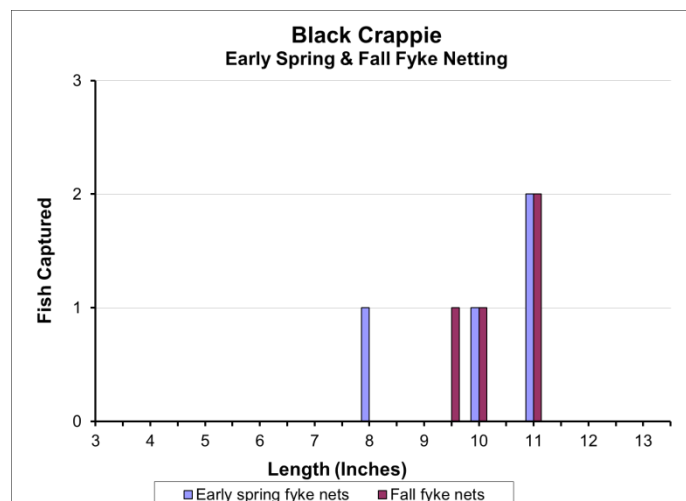


Fall Fyke Nets

Captured 1.3 per net-night $\geq 5"$	
Quality Size $\geq 8"$	100%
Preferred Size $\geq 10"$	75%
Memorable Size $\geq 12"$	0%

Early Spring Fyke Nets

Captured 0.7 per net-night $\geq 5"$	
Quality Size $\geq 8"$	100%
Preferred Size $\geq 10"$	75%
Memorable Size $\geq 12"$	0%



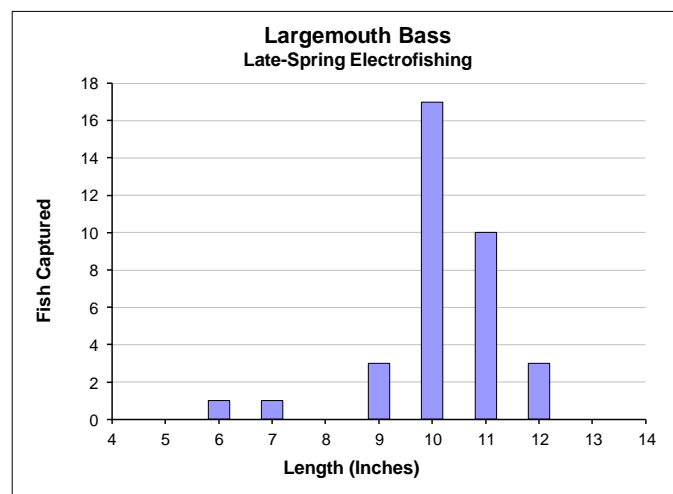
Black crappie catch rates were very low in fall and early spring fyke nets indicating very low population abundance. Age analysis using a small sample of scales showed that black crappies in Bass Lake were growing at rates that trended very near the regional average, reaching 11.3 inches after 8 seasons of growth (n=2). Low abundance and satisfactory growth allow crappies to attain preferred size.

Largemouth Bass



Late Spring Electrofishing

Captured 17 per mile or 27 per hour $\geq 8"$	
Quality Size $\geq 12"$	9%
Legal Size $\geq 14"$	0%
Preferred Size $\geq 15"$	0%



The capture rate of largemouth bass in our late spring electrofishing survey indicates a low to moderate population abundance. Largemouth bass showed poor size structure with no fish exceeding the legal size for harvest. Age analysis using scales showed slower-than-average growth rates. Bass Lake largemouth were on average 11.7 inches at age 5 (range 10.4-12.6, n=22) and 13.3 inches at age 6 (range 12.9-13.9, n=4) compared to the regional average of 12.7 and 14.6 inches at those ages. In infertile lakes of this size, predation by slow-growing largemouth bass can be important in controlling the number of small bluegills, reducing food competition and crowding among bluegills, and promoting adequate bluegill growth rates so that more bluegills can grow to the sizes that anglers want to keep.

Bluegill

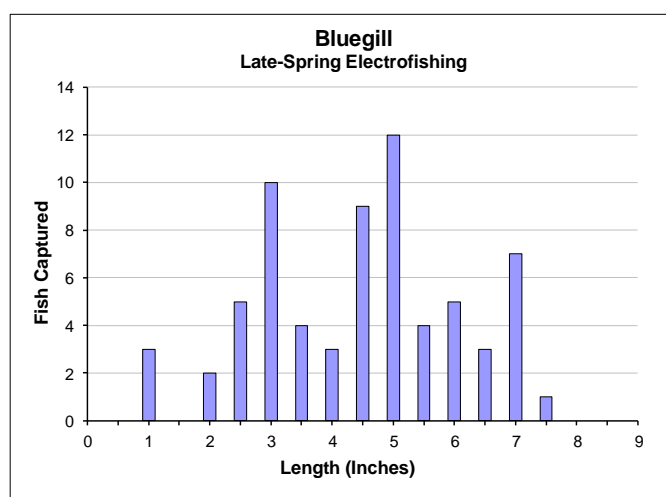
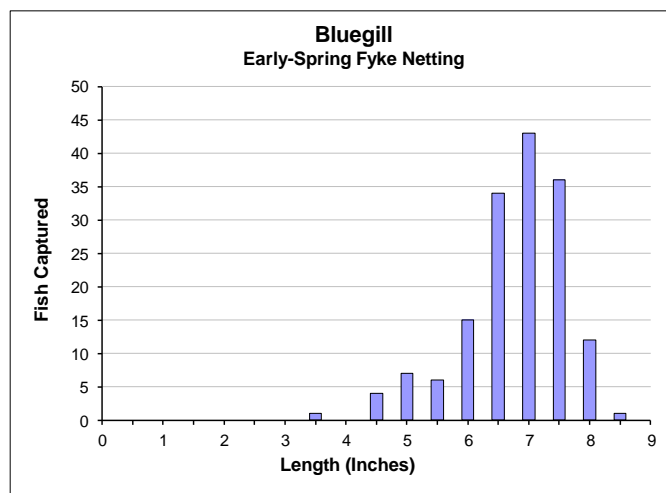


Early Spring Fyke Nets

Captured 27 per net-night ≥ 3 "	
Quality Size ≥ 6 "	89%
Keeper Size ≥ 7 "	58%
Preferred Size ≥ 8 "	9%

Late Spring Electrofishing

Captured 125 per mile or 208 per hour ≥ 3 "	
Quality Size ≥ 6 "	28%
Keeper Size ≥ 7 "	14%
Preferred Size ≥ 8 "	0%



Bluegill abundance has decreased dramatically from the levels recorded in the late 1980's and 1990's. Capture rates and length distributions of bluegills in our spring netting and electrofishing surveys indicated a population with moderate abundance and fair size structure. Age analysis using scales revealed bluegill growth trended below regional averages with bluegills reaching on average 5.7 inches at age 6 (range 5.4-6.1, n=6) and 6.9 inches at age 9 (range 6.6-7.4, n=3). Regional average lengths at those ages are 6.9 and 8.4 inches. Even with slower-than-average growth, the proportion of bluegills ≥ 7 inches has increased steadily in surveys since the late 1980's when we did not measure any fish over 7 inches long. Over half (58%) of the bluegills measured from spring 2011 fyke nets were of "keeper size," and nearly one in ten bluegills in that sample was 8 inches or longer. Late spring 2011 electrofishing captured a lower proportion of keep-size bluegills (14%) and no preferred-size bluegills—differences we noted elsewhere in comparisons of bluegill catches in spring netting and electrofishing surveys completed only weeks apart. Predation by largemouth bass as well as the stocked walleyes and trout has apparently gained enough control over bluegill abundance, reducing competition and substantially improving bluegill size structure.

Survey data collected and analyzed by: Kendal Liebrecht, Greg Rublee, and Jeff Scheirer—WDNR Fishery Team, Park Falls.

Written by: Chad Leanna—Fishery Technician, February, 2015.

Reviewed by: Jeff Scheirer—Fishery Biologist, March 2015.

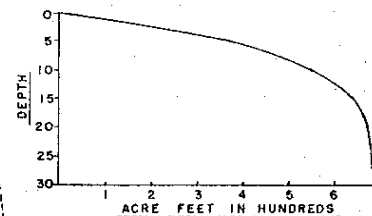
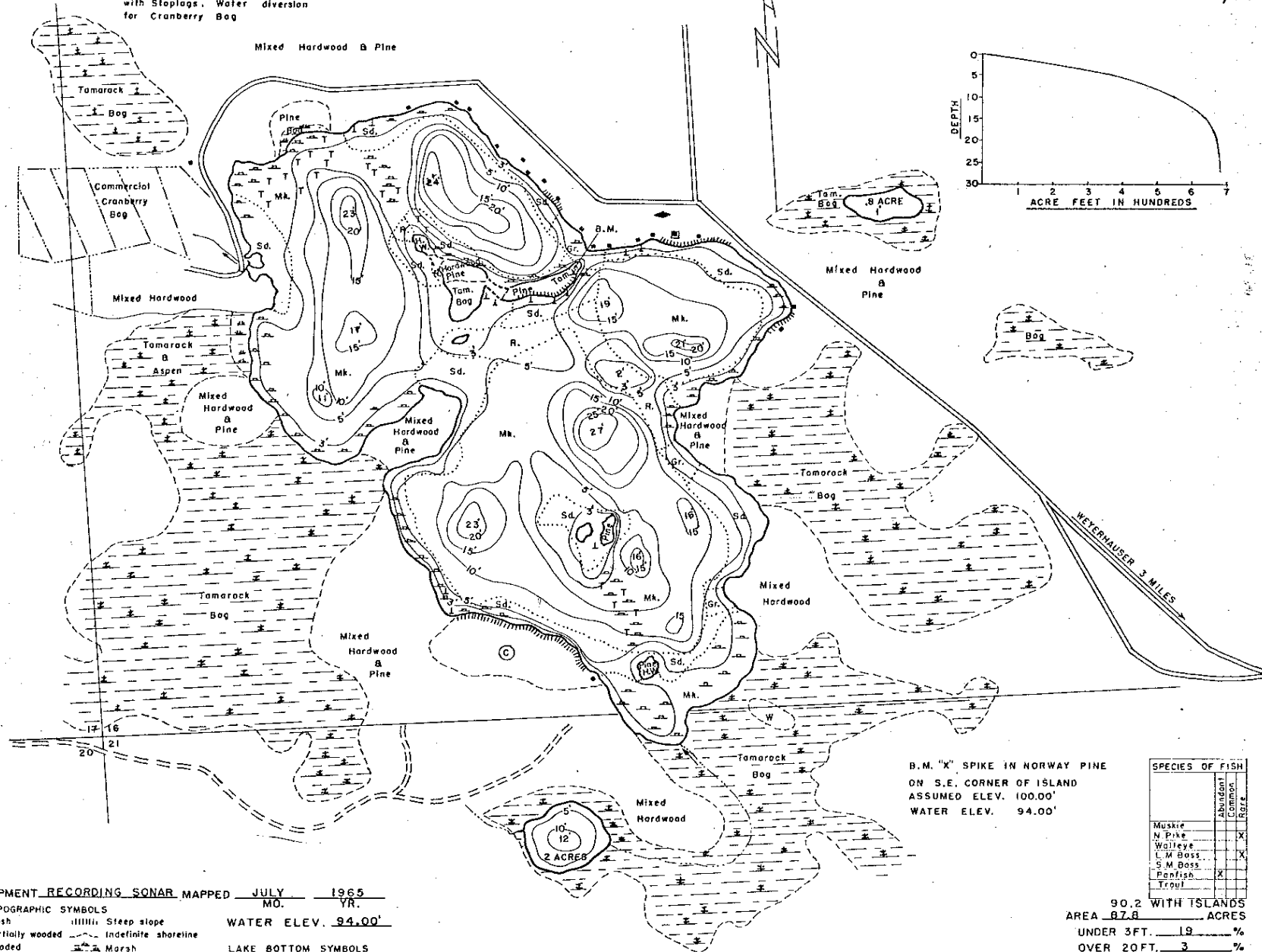
Approved for web posting by: Mike Vogelsang—acting Hayward Field Unit Supervisor, March 2015.

WISCONSIN CONSERVATION DEPARTMENT

LAKE SURVEY MAP

Dam has 5' Head, Concrete Spillway
with Stoplogs. Water diversion
for Cranberry Bog

BASS LAKE
RUSK COUNTY
SEC. 16 T. 34 N. R. 9 W.



B.M. "X" SPIKE IN NORWAY PINE
ON S.E. CORNER OF ISLAND
ASSUMED ELEV. 100.00'
WATER ELEV. 94.00'

SPECIES OF FISH		Abundant	Common	Rare
Muskie				
N. Pike				X
Walleye				
L. M. Bass				X
S. M. Bass				
Perch				
Trout				

EQUIPMENT RECORDING SONAR MAPPED JULY 1965
MO. VR.

- TOPOGRAPHIC SYMBOLS
- Brush
 - Partially wooded
 - Wooded
 - Cleared
 - Pastured
 - Agricultural
 - B.M. Bench Mark
 - Dwelling
 - Resort
- LAKE BOTTOM SYMBOLS
- P. Peat
 - Mk. Muck
 - C. Clay
 - M. Marl
 - Sd. Sand
 - St. Silt
 - Gr. Gravel
 - R. Rubble
 - Br. Bedrock
 - T. Submergent vegetation
 - E. Emergent vegetation
 - F. Floating vegetation

WATER ELEV. 94.00'

300' 0' 300' 600' 900' 1,200' 1,500'

Access Access with Parking Boat Livery
Field work by J. Miller, M. Perkins, L. Salter Drawn by E. Eaton

90.2 WITH ISLANDS
AREA 87.8 ACRES
UNDER 3 FT. 19 %
OVER 20 FT. 3 %
VOLUME 682.5 ACRE FT.
TOTAL ALK. 10 P.P.M.
SHORELINE 2.7 MILES
MAX. DEPTH 27 FEET